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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,875	02/08/2001	Neil Singer	0162095-0011	7119

24280 7590 11/21/2006

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BOSTON, MA 02110

EXAMINER

WONG, KIN C

ART UNIT PAPER NUMBER

2627

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/779,875

Applicant(s)

SINGER ET AL.

Examiner

K. Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/5/06 & 12/22/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-102 is/are pending in the application.
- 4a) Of the above claim(s) 23-32, 35-37 and 55-102 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22, 33-34 and 38-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

This is a response to amendment filed on 9/5/06 and 12/23/04.

Election/Restrictions

Applicant's election without traverse of claims 1-22, 33-34, and 38-54 in the reply filed on 9/5/06 is acknowledged.

Claims (23-32, 35-37 and 56-102) are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected claims, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 9/5/06. Nonelected claims needed to be cancel in next reply.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims (1-22, 33-34 and 38-54) are rejected under 35 U.S.C. 102(e) as being anticipated by Singhose et al (5638267).

Regarding claim 1: Singhose et al discloses the procedure of controlling movement in a dynamic system which can be expressed in terms of both rigid and flexible modes (in col. 27, lines 45-55 where Singhose et al describes flexible and rigid modes in the dynamic system), the procedure including the steps of:

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generating a rigid body input for the dynamic system (col. 27, line 53 to col. 28, line 23 of Singhose et al);

processing the rigid body input so as to produce a processed input which compensates for vibrations in the flexible mode of the system (col. 28, lines 24-61); and

applying the processed input to control the dynamic system (col. 28, line 62 to col. 29, line 65).

Regarding claim 2: Singhose et al depicts in figure 46 that wherein the generating step includes (i) creating a model of the rigid mode of the dynamic system based on a modal analysis, and (ii) determining the rigid body input based on the modal analysis (see the associated descriptions for details).

Regarding claim 3: Singhose et al teaches that wherein the rigid body input corresponds to a fundamental limiting parameter of the system, the fundamental limiting parameter of the system comprising a first parameter of the system to enter into saturation (in col. 19, line 56 to col. 20, line 2 where Singhose et al describes the saturation of the system).

Regarding claim 4: Singhose et al discloses that wherein the processing step processes the rigid body input in accordance with a system vibration limiting constraint and a system sensitivity constraint (in col. 20, line 3 to col. 21, line 7 where Singhose et al describes the system sensitivity constraints).

Regarding claim 5: Singhose et al teaches that wherein the system vibration limiting and sensitivity constraints reduce vibration during movement of a component of the dynamic system by less than 100% (in col. 20, lines 18-27 of Singhose et al).

Regarding claim 6: Singhose et al teaches that wherein the processing step processes the rigid body input in accordance with one or more constraints that are a function of a movement distance of a component of the dynamic system (in col. 33, line 14-38 of Singhose et al).

Regarding claim 7: Singhose et al teaches that wherein the processing step processes the rigid body input in accordance with a system vibration limiting constraint only (in col. 11, line 43 to col. 12, line 45 of Singhose et al).

Regarding claim 8: Singhose et al teaches that wherein the processing step shapes the rigid body input using a predetermined shaping function (in col. 13, lines 33-46 of Singhose et al).

Regarding claim 9: Singhose et al teaches that wherein the rigid body input includes both transient portions and a steady state portion; and wherein only the transient portions of the rigid body input are shaped in accordance with the predetermined shaping function (in col. 45, line 1-28 and col. 57, line 62 to col. 58, line 29 of Singhose et al).

Regarding claim 10: Singhose et al teaches that wherein the processing step processes the rigid body input by filtering the input using filters having zeros which are substantially near poles of the system (in col. 57, lines 42-60 of Singhose et al).

Regarding claim 11: Singhose et al teaches that wherein the processing step processes the rigid body input in accordance with at least one of constraints relating to system thermal limits, system current limits, and system duty cycle (in col. 18, lines 50-58 of Singhose et al).

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Regarding claim 12: Singhose et al teaches that wherein the processing step processes the rigid body input by determining a movement distance of a component of the dynamic system and modifying the rigid body input based on the movement distance (in col. 18, lines 35-41 and col. 27, line 44 to col. 28, line 23 of Singhose et al).

Regarding claim 13: Singhose et al teaches that wherein the rigid body input includes a Posicast input (in col. 6, line 64 to col. 7, line 2 and col. 51, line 65 to col. 52, line 13 of Singhose et al).

Regarding claim 14: Singhose et al depicts in figure 31 that wherein the rigid body input comprises a symmetric input (see the associated descriptions for details).

Regarding claim 15: Singhose et al teaches that wherein the processing step processes the rigid body input in accordance with a symmetric constraint that varies as a function of at least one of time and position of a component of the dynamic system (in col. 33, lines 19-39 where Singhose et al describes the symmetric constrain that with the time and the position).

Regarding claim 16: the limitations of wherein the rigid body input comprising a voltage which has been controlled by controlling current are considered inherent because voltage is an integral component of the current.

Regarding claim 17: Singhose et al teaches that wherein the processing step comprises: identifying system parameters in real-time; and modifying the rigid body input in real-time in accordance with the system parameters identified in the identifying step (in col. 1, lines 50-59 of Singhose).

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Regarding claim 18: Singhose et al depicts in figure 7 that wherein the determining step determines the rigid body input in accordance with an insensitivity constraint (see the associated descriptions for details).

Regarding claim 19: Singhose et al teaches that wherein the model of the system comprises a plurality of equations for the system; and wherein an insensitivity constraint for a particular system parameter is added to the system by taking a derivative of a system equation with respect to the insensitivity constraint and setting the derivative equal to zero (in col. 11, lines 6-53 of Singhose et al).

Regarding claim 20: Singhose et al teaches that wherein the model of the system comprises a plurality of equations for the system; and wherein an insensitivity constraint for a particular system parameter is added to the system by setting a series of constraints for different values of the system parameter so as to limit a variation in the system parameter (in col. 11, line 6 to col. 16, line 67 of Singhose et al).

Regarding claim 21: the limitations of wherein the rigid body input is determined in accordance with a feedback signal; and wherein the method further includes adding a quasi-static correction factor correcting for a deflection in the component during movement are considered inherent within the reference of Singhose et al.

Regarding claim 22: Singhose et al teaches that further comprising determining a center of mass of a component of the dynamic system (col. 27, line 44 to col. 28, line 43 of Singhose et al); wherein the rigid body input is determined in accordance with a feedback signal based on the center of mass of the component (in col. 57, line 19 to col.

58, line 54 where Singhose et al describes feedback loop in the compensation or cancellation of the vibration in the system).

Regarding claims 33-34 and 38-54: apparatus claims (33-34 and 38-54) are drawn to the apparatus corresponding to the method of using same as claimed in claims (1-22), and are rejected for the same reasons of anticipation as used above.

Response to Arguments

Applicant's arguments filed 12/22/04 have been fully considered but they are not persuasive.

Regarding remarks filed on 12/22/04: applicant argues that Singhose et al fails to reduce the computational difficulty of obtaining a solution relative to the optimization approach to reducing the vibration levels in the relevant modes of the system. Applicant's arguments are not claimed or positively recited in the claims. Applicant is directed to col. 38, line 61 to col. 27 and col. 55, lines 34-46 where Singhose et al describes the reduction of computation for reducing the vibration level in the relative modes in the system. Therefore, Singhose et al teaches reduction in computation and vibration. Hence fore, the rejection to the claims stand.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

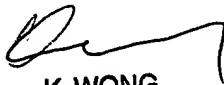
Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Wong whose telephone number is (571) 272-7566.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, H. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

kw

19 Nov 06


K. WONG
PRIMARY EXAMINER